

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/000393

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: G01N 35/10, B41J 2/175

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI, JAPIO: B67D, B41J, piezo, reservoir, tank, dispense, eject, vacuum, plunger, piston, filter and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2000/005073 A (3WG INCORPORATED) 3 February 2000 Page 1 lines 17-20, page 8 lines 3-14, page 8 line 24-page 9 line 3, figures	1-3, 7-9, 20
X	US 5552816 A (ODA et al) 3 September 1996 Col 1 lines 55-59, col 5 lines 29-32, col 9 line 55-col 10 line 6, figures 1-3	1-3, 7-18, 20
X	US 5907341 A (MIYAZAWA) 25 May 1999 Abstract, column 3 lines 13-65, figures	1-3, 7-9, 20
X	US 6511157 B1 (YOSHIMURA et al) 28 January 2003 Column 1 line 34-column 2 line 39, column 4 line 49-column 5 line 38	1-3, 7-9, 20



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
27 May 2004

Date of mailing of the international search report
- 7 JUN 2004

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5680164 A (MILLER et al) 21 October 1997 Figures 2-10	7-18, 20
X	JP 2000-329771 A (OLYMPUS OPTICAL CO LTD) 30 November 2000 Abstract, figures	20
P, X	NL 1019359 C (MACHINEFABRIEK ROERSTREEK B.V.) 14 May 2003 Abstract, figures	20

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See separate sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

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Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box III:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1-6 are directed towards a piezoelectric dispensing device which has a removable reservoir for containing liquid, a piezoelectric tube in communication with the reservoir and means which applies a vacuum or pressure to the liquid in the reservoir. It is considered that the means to supply a vacuum or pressure to the liquid in the reservoir comprises a first "special technical feature".
2. Claims 7-19 are directed to a piezoelectric dispensing device which has a reservoir for containing liquid, and a piezoelectric tube in communication with the reservoir. The reservoir includes first a second filter means. It is considered that the reservoir having first and second filter means comprises a second "special technical feature".
3. Claim 20 is directed to a method of dispensing fluid from a piezoelectric tube assembly, which has a dispensing end and a non-dispensing end. The method comprises dispensing fluid from a reservoir which is connected to the non-dispensing end of tube. It is considered that the step of dispensing fluid from a reservoir which is connected to the non-dispensing end of tube comprises a third "special technical feature".

The feature common to all of the claims is a reservoir connected to a piezoelectric tube. However this common feature is generic in the printing and dispensing arts. Consequently the common feature does not constitute "a special technical feature" within the meaning of PCT Rule 13.2, second sentence, since it makes no contribution over the prior art. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen. Consequently the claims do not satisfy the requirement of unity of invention a posteriori.

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Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	2000/005073	AU	52260/99		
US	5552816	JP	5-330076		
US	5907341	EP	665108	EP	914956
		JP	7-125238	SG	52541
		US	6280024	HK	1020550
				US	5633667
US	6511157	DE	19708016	JP	9-239974
US	5680164	DE	19512812	GB	2295583
				HK	1011949
JP	2000-329771	NONE			
NL	1019359	NONE			
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					